

Lestodelphys halli. By Larry G. Marshall

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Lestodelphys Tate, 1934

Lestodelphys Tate, 1934:154. Type species *Lestodelphys halli* (Thomas, 1921:137) by monotypy. A renaming of *Notodelphys* Thomas, 1921:137, preoccupied by *Notodelphys* Allman, 1847:2, and *Notodelphys* Lichtenstein and Weinland, 1854:373.

CONTEXT AND CONTENT. Order Marsupialia, Superfamily Didelphoidea, Family Didelphidae, Subfamily Didelphidae. The genus *Lestodelphys* includes only one living species, *Lestodelphys halli*.

Lestodelphys halli (Thomas, 1921)

Patagonian Opossum, El Lestodelfo Patagónico

Lestodelphys halli (Thomas, 1921:137). Type locality, Cabo Tres Puntas, southeastern coast of Patagonia, about 47° S, Santa Cruz Province, Argentina.

CONTEXT AND CONTENT. Context noted above. *Lestodelphys halli* is monotypic (see Cabrera, 1957:11).

DIAGNOSIS. General appearance similar to that of *Marmosa elegans*, but with specializations favoring a more predaceous mode of life. Skull with shortened muzzle, crowded pre-molar region, and widely spread zygomatic arches (figure 1). Nasals expanded in posterior third, but narrow at posterior-most end. Interorbital region short, and with only a slight indication of a postorbital process. Brain case smooth, lamboidal ridges small. Palate perforate between first three molars.

The auditory bullae are extremely large for a didelphine, but much smaller than in the living microbiothere *Dromiciops*. Bulla is formed mostly by inflated tympanic process of alisphenoid anteriorly, with significant contributions from the ectotympanic laterally, and the petiotic posteriorly.

The dental formula is $i\ 5/4$, $c\ 1/1$, $p\ 3/3$, $m\ 4/4$, a total of 50. Canines are exceptionally long, nearly vertical, and are much less proclivous than in species of *Marmosa*. Upper incisors are as in species of *Marmosa*, the first pair is set apart from, but are no longer than, the others. Upper and lower premolars increase in size from first to third, and are set closely together. The first premolar is much reduced. All premolars have a distinct posterobasal cusp. The combined length of the premolars barely exceeds that of the first two molars, whereas in species of *Marmosa* and other opossums the length of the three premolars is approximately equal to that of the first three upper molars.

Upper molars are narrow anteroposteriorly (figure 2), compared to other living didelphines. Styral shelf (ss) is well developed and accounts for about half of the occlusal surface of the tooth. Protocone (pr) is reduced compared with that of species of *Marmosa*. Paracone (pa) is extremely reduced; metacone (me) is exceptionally large, giving the second and third molars a sub-zalambodont appearance.

Mandibular ramus is strongly bowed ventrally (figure 3) and lower incisors are small and closely set. An anterobasal cingulum (c) is well developed, but not prominent. Paraconid (pad) is smaller than metaconid (med) on all molars. Talonid (t) is narrow anteroposteriorly as in species of *Monodelphis*.

Fur is rather short, dense, fine, and soft. General color is gray, dorsum is a dark gray with paler sides, shoulders and hip patches are dark. Under surface is uniformly white to bases of hairs. Cheeks and a patch over eyes are whitish. Ears are short, rounded, flesh-colored, and with a whitish patch at their bases posteriorly. Forearms, hands, ankles, and feet are pure white. Feet are markedly more robust than in species of *Marmosa*. Claw of pollex, as in other digits, extends far beyond the soft terminal pad, suggesting fossorial habits. Tail is much shorter than head and body, is strongly incrassated, is furred much as is the body for about 20 mm at its base, then thickly covered with short fine hairs, and is dark grayish brown above but whitish below and at the tip (Thomas, 1921).

GENERAL CHARACTERS. Length of head and body, 132 to 144 mm; length of tail, 81 to 99 mm; length of hind foot, 15.7 to 17.7 mm; and length of ear, 18 to 22 mm (above measurements based on four specimens). Skull measurements (in millimeters) of British Museum (Natural History) specimens numbered 21.6.7.19 (holotype), 28.12.11.205, and 28.12.11.206 have the following ranges: greatest length, 31.2 to 33.0; condylobasal length, 31.0 to 32.5; zygomatic breadth, 20.0 to 21.6; length of nasals, 13.2 to 13.5; middle breadth of nasals, 2.7 to 3.0; greatest breadth of nasals, 4.0 to 4.6; minimal interorbital breadth, 5.6 to 5.8; palatal length, 17.0 to 17.3; breadth outside anterior edge of M3's 11.2 to 11.6; maxillary tooththrow (anterior edge of canine to posterior edge of M4), 13.0 to 13.5; length of premolars, 4.5 to 4.7; length of three anterior molars, 6.0 to 6.2.

Measurements of lower jaw and dentition from BM 28.12.11.205 and 28.12.11.206 are as follows: maximum length of jaw (anterior edge of medialmost incisor to posterior edge of condyle) on line perpendicular to axis of tooththrow, 25.0 to 25.3;

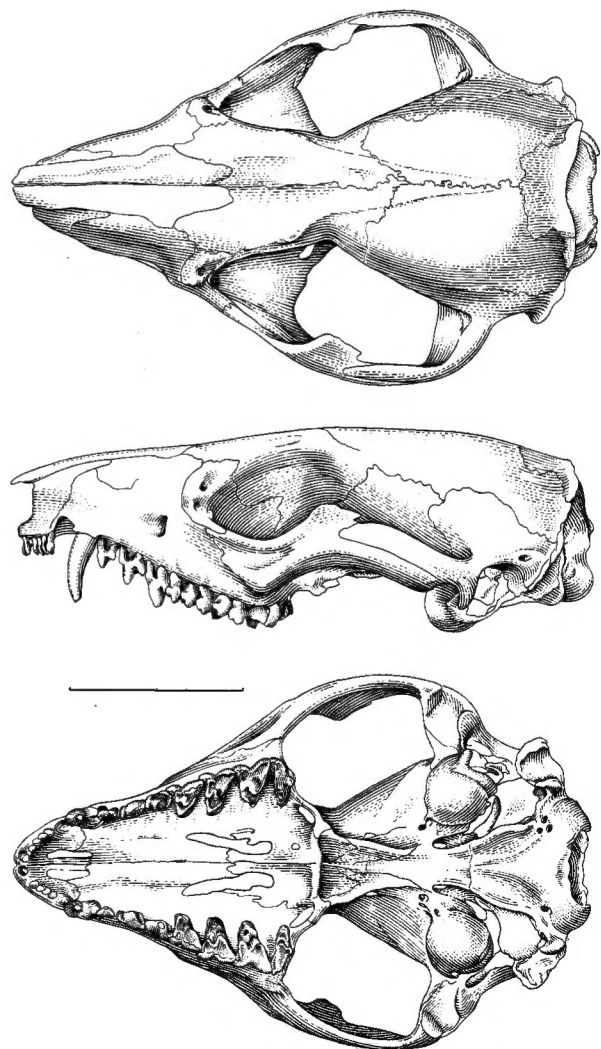


FIGURE 1. Skull of *Lestodelphys halli* (BM 28.12.11.206, a female from Pico Salamanca, Chubut) shown, from top to bottom in dorsal, lateral, and ventral views. Scale, 10 mm.

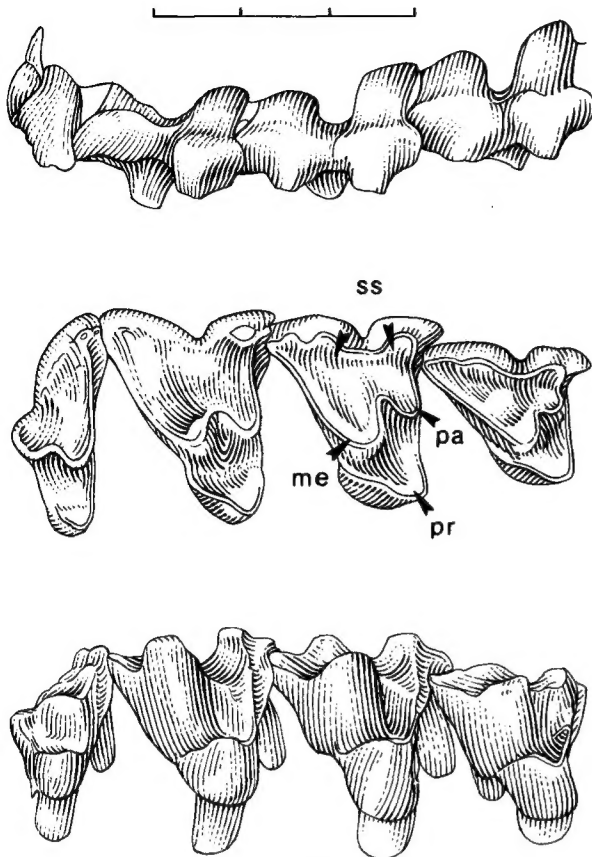


FIGURE 2. Detail of right upper dentition of *Lestodelphys halli* (BM 28.12.11.206, a female from Pico Salamanca, Chubut) shown, from top to bottom in lateral, occlusal, and medial views. Scale, 3 mm. Abbreviations are noted in text.

depth of mandibular ramus below m3, 3.8 to 4.0; breadth of same, 1.9 to 2.0; length of p1 to p3, 4.2 to 4.3; length of m1 to m4, 8.0 to 8.1; and length of p1 to m4, 12.1 to 12.2.

DISTRIBUTION. This animal occurs farther south than any other known living marsupial (figure 4). The holotype, BM 21.6.7.19, an adult male, is from Cabo Tres Puntas, on the eastern coast of southern Patagonia, and on the southernmost edge of the Golfo de San Jorge at about latitude 47° S.

Reig (1959) reported on a specimen collected from the Estancia Los Manantiales near Languineo. This specimen is in the Instituto "Miguel Lillo" de Tucumán (no. 01032), Argentina, and consists of a skin with parts of a skull and mandible.

More recently Crespo (1974:5) recorded three specimens in the Museo Argentina de Ciencias Naturales "Bernardino Rivadavia," Buenos Aires (= MACN), which were collected by Mr. E. Budin (sometime before 1947) at Pico Salamanca along the Atlantic coast in southeasternmost Chubut Province. These specimens, consisting only of skins, include two females (MACN 47-24, 47-25) and one male (MACN 47-26).

Simpson (1972:18) noted the existence of four additional specimens in the collections of the British Museum (Natural History). These include BM 28.12.11.205-208, one male and three females, all with skulls and jaws. These specimens also were collected by Mr. E. Budin in the vicinity of Pico Salamanca.

Lestodelphys halli is known only from the above nine specimens.

FOSSIL RECORD. No fossils of this genus or species are recognized.

FORM. Tate (1933:15) suggested that *Lestodelphys* (listed as *Notodelphys*) may have arisen from the same ancestral stock as the *elegans* group of *Marmosa* to which it conforms rather closely. The tail becomes similarly thickened near the base in the winter due to a seasonal accumulation of fat. *Lestodelphys* has, however, become specialized with regard to food getting and food consumption, the skull and jaws being short and massive. The shortening of the muzzle, as compared with *Marmosa*, is closely parallel to that of the Australian marsupial *Dasyurus*

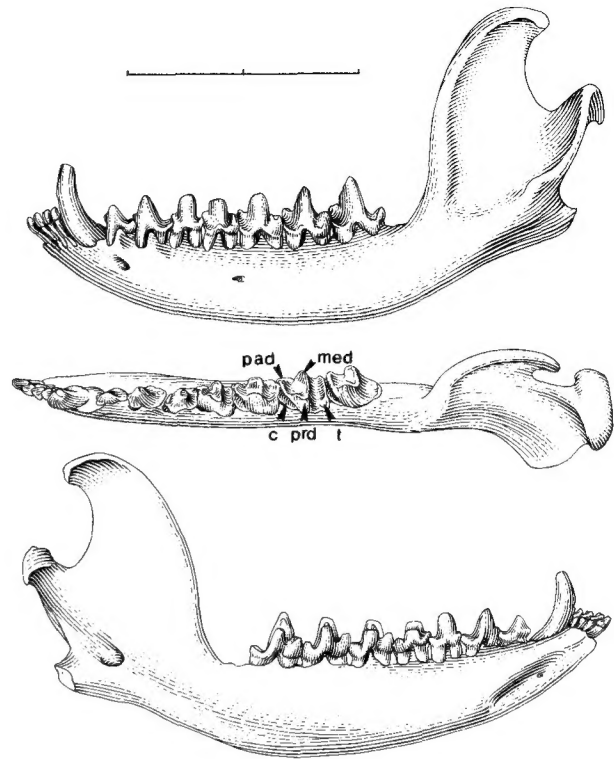


FIGURE 3. Left lower jaw of *Lestodelphys halli* (BM 28.12.11.206, a female from Pico Salamanca, Chubut) shown, from top to bottom in lateral, occlusal, and medial views. The scale is 10 mm. Abbreviations are noted in text.

as compared with *Phascogale*. The shortening occurs in the premolar region, and is a specialization for increased biting power.

Simpson (1972:18) noted that the fossil didelphid *Thylatheridium* is quite suggestive of *Lestodelphys*. The rostrum of *Lestodelphys* is, however, more elongate than that of *Thylatheridium*, the sagittal crest is absent (the species is somewhat smaller), the palatal vacuities are larger, P2 is subequal to P3 or slightly larger (P2 tends to be slightly larger in *Thylatheridium*), and the individual upper molars are proportionally narrower anteroposteriorly. "Both have been affected to some extent by moderate carnassialization of the dentition that has occurred in a number of didelphids to varying degrees. *Lestodelphys* is apparently allied to *Monodelphis*, and *Thylatheridium*, although allied to both, is probably closer to *Lestodelphys*. In a less split taxonomy the three genera, although based on different species, could well be considered synonymous."

Reig and Simpson (1972:534) also called attention to the similarities in dental specializations between *Lestodelphys*, the living didelphid *Lutreolina*, and the fossil didelphid *Sparasocynus*.

ECOLOGY. Typically, small living didelphids "feed mainly on insects and fruit, and as insects are rare and fruit almost non-existent in its far-southern habitat . . . *Lestodelphys* . . . has had to acquire peculiar habits, and no doubt lives largely on mice and small birds" (Thomas, 1921:138). One specimen was caught in a steel trap baited with a dead bird (Walker, 1968:19), and Cabrera and Yepes (1960:45) even suggested that this animal lives totally on birds.

The feet of *Lestodelphys* are stronger than those in species of *Marmosa* and the animal is probably more terrestrial than the murine opossums (Walker, 1968:19). It is said to inhabit pampas. Little is known regarding the natural history of *L. halli*.

ETYMOLOGY. The generic name *Lestodelphys* is formed from the prefix *Lesto-* (Greek, a robber) in reference to the relatively massive skull and wide strong jaws of this opossum, which lead to the assumption that the animal has predaceous habits. The specific name *halli* is in honor of Mr. T. H. Hall, collector of the type specimen.

Special thanks to Dr. G. B. Corbet, British Museum (Natural History) for loan of *Lestodelphys* specimens for study.

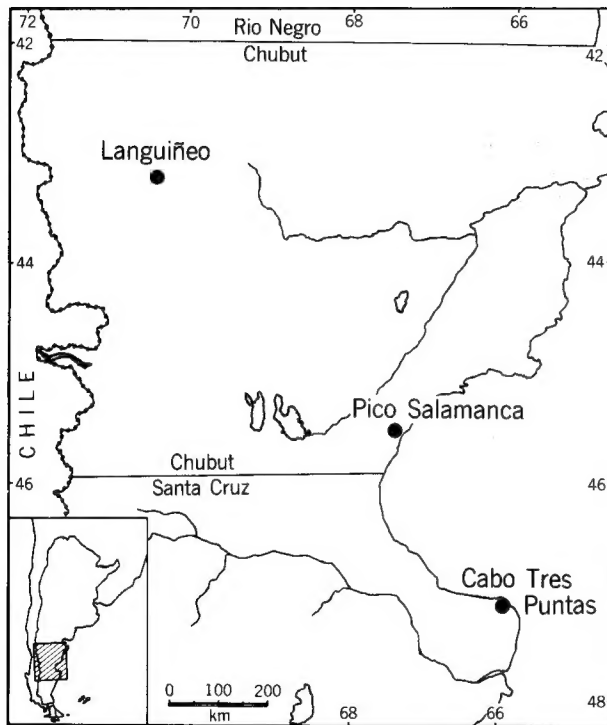


FIGURE 4. Records of occurrence (dots) of *Lestodelphys halli*, Chubut and Santa Cruz provinces, southern Argentina.

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